A Preliminary Analysis of Sleep Quality and Risk Behaviors in College Students

Jennifer Aldana, Alexis Bueno, Karen I. Wilson Ph.D.
California State University, Dominguez Hills

Introduction
Inadequate quality of sleep is common in college students and associated with poor decision-making. Previous research has also demonstrated that poor sleep is associated with risk behavior. The purpose of this study was to analyze the relationship between poor quality of sleep, decision-making, and risk behaviors in college students. College students attending a university in Southern California participated in a pilot study that is part of a larger study examining additional factors related to sleep. The participants completed the Iowa Gambling Task (IGT) and completed the Pittsburgh Sleep Quality Index (PSQI), the quality of sleep was measured over a period of seven days. Data was collected in two in-person sessions followed by a testing session that included the Iowa Gambling Task. The primary aim of this study is to explore the relationship between poor quality of sleep, risk behavior, and decision making. It is hypothesized that poor sleep quality will be associated with poor decision making and riskier behaviors. Results revealed no variability in the quality of sleep reported by participants; therefore, the hypotheses could not be examined. The small sample size may have contributed to these results. A significance may be found in the larger ongoing study examining additional related factors.

Methods and Materials

Participants:
The study took place in the Neuropsychology Laboratory at the California State University, Dominguez Hills.
Participants were recruited through emailed fliers and displayed fliers around the campus.

Total Sample (N=16)
Gender: Female = 11
Male = 5
Age: Mean Age = 24
Age Range = 18-39

Measures:

- Iowa Gambling Task (IGT) (Bubulic and Drabick, 2003) has been used extensively to study decision making under conditions of risk and uncertainty. IGT performance has been associated with strong impulsivity, and the IGT has been described as a direct measure of state impulsivity.
- Pittsburgh Sleep Quality Index (PSQI) (Buysse, Reynolds, Kupfer, & Der-Martirosian, 1989) is a self-reporting index containing 19 items which measure sleep duration, disturbance, latency, efficiency, and dysfunctions due to sleepiness, the need for medications to sleep, and overall sleep quality. Sleep quality itself is scored as: 0 = “very Good”, 1 = “Fairly Good”, 2 = “Fairly Bad”, and 3 = “Very Bad”.

Hypothesis:
Poor quality of sleep was predicted to be related to poor decision-making and risk behavior.

Results

Graph 1. Means of decisions made in the IGT, either advantageous or disadvantageous decisions. Table 1. Average mean of each decision made.

<table>
<thead>
<tr>
<th></th>
<th>Advantageous</th>
<th>Disadvantageous</th>
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<tbody>
<tr>
<td>Mean</td>
<td>41.19</td>
<td>52.06</td>
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<tr>
<td>Std. Deviation</td>
<td>16</td>
<td>16</td>
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These results show that even though all 16 participants reported “very good” quality of sleep, they still made on average more disadvantageous decisions (Mean= 52.06) compared to advantageous decisions (Mean= 41.19). There was no significant difference (p=.266) between advantageous and disadvantageous decisions made on the IGT.

Discussion

- The result for the PSQI indicates that every participant reported having very good quality of sleep.
- Participants managed to make on average more disadvantageous decisions compared to advantageous decisions. There was no significant difference between the two with a p=.266.
- All 16 participants reported good quality of sleep that resulted in no variation which in turn made it difficult to conduct analyses.

Limitations and Future Directions

- One reason that can be attributed to this is the fact that the participants did not approach the IGT or the PSQI with clear honesty. Participants may have hurried through the assessment and possibly responded inaccurately.
- A small sample size may have contributed to no variation and limited results.
- Future research should concentrate on using more objectifying measures for sleep quality.

Conclusion
Looking at the impact of sleep loss on cognitive function can help us understand the purpose of sleep. There is minimal research on sleep but it has been expanding. Research and education on sleep hygiene are needed to inform and help individuals comprehend that sleep is essential for optimized cognitive functioning. Our current study found that very good quality of sleep was associated with poor decision making and riskier behaviors which goes against past research.

References

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